



QUARTERLY PROGRESS REPORT

Project Title:	Finite Element Analysis of Bridge Approach and Transition Slab		
RFP NUMBER:	NJDOT RESEARCH PROJECT MANAGER: Robert Sauber		
TASK ORDER NUMBER/Study Number: 88-03 / 4-23933	PRINCIPAL INVESTIGATOR: Hani Nassif		
Period Starting: 6/1/2000	Period Ending: 9/30/2000		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search	10%	20%	40%	4%
Site Selection, field observation, and parameter designation	30%	0%	0%	0%
Finite element model verification and development	25%	30%	40%	5%
Parametric Study	15%	0%	0%	0%
Progress Reports	15%	0%	0%	0%
Final Report	5%	0%	0%	0%
TOTAL	100%			9%

1. Progress this quarter by task:

- A. A finite element model is under development using two approaches for modeling the soil underneath the approach slab. One model considers the soil as a series of equivalent springs having a linear stiffness with a constant k_s while the slab is a beam on elastic foundation. The slab is modeled using beam, shell, and brick elements. Another model considers the soil as a series of actual layers compacted with actual soil properties. The model for the soil behavior is modeled using the Mohr-Coulomb failure criteria.
- B. The literature search is yielding more references on the design of approach slabs and other DOT experience with the topic.

2. Proposed activities for next quarter by task

- A. Calibrate the FE model with results from available numerical examples and compare accuracy with analytical models such as the beam on elastic foundation problem.
- B. Prepare criteria for a site selection and identify what soil properties are needed. Plans and as-built data will be searched to use as input for the FE model. The site selection process will be coordinated with NJDOT staff.

3. List of deliverables provided in this quarter by task (product date)

N.A.

4. Progress on Implementation and Training Activities

N.A.

Department of Civil and Environmental Engineering
623 Bowser Rd. Piscataway NJ 08854-8014
Tel : 732-445-0579 Fax: 732-445-0577



CAIT

Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

5. Problems/Proposed Solutions

N.A.

6. Budget Summary

Total Project Budget(# of years)	1 Year	\$48,220.00
Total Project Expenditure to date		
% of Total Project Budget Expended		%
Task Order Number/Study Number:		88-03 / 4-23933
Current Task Order Budget (# of years)	1 Year	\$48,220.00
Actual Expenditure to date against current task order		
% of current task order budget expended		%

Department of Civil and Environmental Engineering
623 Bowser Rd. Piscataway NJ 08854-8014
Tel : 732-445-0579 Fax: 732-445-0577